in Cuba *, *R. laticauda* in Venezuela and Colombia, whereas the only examples of *R. agamemnon* and *R. Borellii* hitherto known are labelled "Brazil," without further particulars. Thanks, however, to Burchell, we are now aware that *R. Borellii* is found in the Province of Goyaz, in the upper valley of the Rio Tocantins or that of at least one of its tributaries. Burchell was at Porto Real (now Porto Nacional) when he made his note on specimen no. 1274. Burchell's collection also contains another specimen of the same species (a female) bearing a label "Body and legs redish. Between the boxes at our station at Sape. 15. 10. 28." Referring to the Index we find that Burchell gives "Sª Brigida" as his locality on Oct. 15, 1828. Sapé is mentioned on Oct. 14. The position is between Cavalcanti, his resting-place on Sept. 30th, and Conceição, which he reached on Oct. 18th, but apparently much nearer to the latter. A glance at Plate III. will show the positions of these two localities of *R. Borellii*.

So far as the function of the organ in these American Buthidæ is concerned, it need only be said that since it is equally well developed in both sexes, and occurs also in immature forms, there is no reason to suppose that it has any sexual significance. Hence, like the stridulating-organs of other scorpions and of the spiders of the family Aviculariidæ, its significance must be regarded as purely aposematic.

EXPLANATION OF PLATE IV.

Fig. 1. *Rhopalurus Borellii*, Poc., ♀, nat. size; drawn from typical example.

Fig. 2. Ditto. Ventral surface of anterior extremity of abdomen and of posterior extremity of cephalothorax, to show the granular areas on the first abdominal sternite, the pecten of the left side being removed.

Fig. 3. Ditto. Piece of the pecten seen from its dorsal side, to show the finely ridged stridulating area.

Fig. 4. *Rhopalurus junceus* (Herbst). Ditto.

V.—*Notes on* Depastrum cyathiforme, *Gosse*.

By E. S. Russell.

[Plate V.]

M. Sars, in 1846, was the first to describe and figure this interesting little Lucernarian. He discovered it near Bergen and described it under the name of *Lucernaria cyathiformis*

* There are specimens in the British Museum labelled "Mexico" and "Brazil." These localities, however, require confirmation.

as follows :—" Semipollicaris, stipite disco circulari, repando sese affigente; corpore cyathiformi, margine dilatata, repanda circulari, integra (s. non in radios divisa) tentaculifera, tentaculis sæpissime in fasciculis 8 fere continuis, ad marginem corporis dispositis; organis generationis 8, binis approximatis " (Faun. lit. Norveg. no. 1, p. 26, tab. iii. figs. 8–13).

Shortly afterwards it was found in great abundance by Mr. David Landsborough, Jun., at Southend, Arran, and also by Dr. Landsborough at Corriegils, Arran. The specimens were identified by Mr. Joshua Alder as *Lucernaria cyathiformis*, Sars, and he sent a drawing to Mr. George Johnston, who, on the strength of this drawing, incorporated the species in his 'Hist. of Brit. Zoophytes,' vol. i. p. 475 (London, 1847).

Gosse (Synopsis Brit. Actiniæ, 1858) then founded the genus *Depastrum* for specimens which he found at Weymouth, which he regarded as identical with the *Lucernaria cyathiformis* of Sars. Next year some small specimens were found by Allman (Rep. Brit. Assoc. Aberdeen, 1859) in the Orkney Isles, which seem to have been immature specimens of *Depastrum cyathiforme*, Gosse. It does not appear to have been recorded at any other locality until found by Beaumont at Port Erin, Isle of Man ('Fauna of Liverpool Bay,' iv.: Liverpool, 1895). He mentions also a specimen from Plymouth.

In the month of July 1903 I rediscovered *Depastrum* on the shore at West Bennan, Southend, Arran; and in August, while at the Millport Biological Station, near the Lion Rock, Millport, and also near the old castle on the east side of Little Cumbrae. The animal seems to have a wide distribution, and I have no doubt that a careful search would reveal its presence in many localities from which it is hitherto unrecorded.

I found *Depastrum* in large numbers under stones at about half-tide, and also farther out. It adheres very firmly to the underside or occasionally round the edges of fairly large stones, so firmly that it has to be scraped off with a knife. It is very local in its distribution, but generally abundant where it does occur, though at one locality in Little Cumbrae I found only a few scattered individuals. It is difficult to account for its local distribution, but in my experience it is never found in muddy localities nor in spots where there is much decaying seaweed. It occurs well up the beach, and appears to be quite a hardy form. In Arran my largest specimens were got near low-water mark, but at Cumbrae large specimens occurred more plentifully halfway

up the beach. In its natural conditions it is almost always pendent, being incapable of supporting itself with stalk extended and erect, on the upperside of a stone. When watched carefully in confinement it is seen to turn the widely expanded bell-like umbrella in different directions, as if searching for food. It appears to be quite incapable of refixing itself after having been dislodged from its resting-place.

The stalk is very contractile, as is also the rim of the umbrella. Four muscles, which extend up the tænioles (Pl. V., *tm.*), are the agents for contracting the stalk, while the margin is contracted by a circular muscle (*cm.*) which passes round outside the insertion of the tentacles, and in contracting pulls the margin well over the tentacles, leaving only a hole in the centre, through which the tips of some of the tentacles appear. I may here remark that it is only in partly contracted individuals that several rows of tentacles are seen; in fully expanded adult individuals there do not appear to be more than two rows. Haeckel, in his diagnosis of this species ('System der Medusen'), describes it as having the tentacles in several rows. Furthermore, none of my specimens reach the dimensions noted by Haeckel (8–10 mm. for length of stalk, length of umbrella, and breadth of umbrella), the largest I have seen having a stalk only 7 mm. long, while the usual size of good-sized specimens is 4 mm. for length of stalk, 6 mm. for height of bell, and 5–6 mm. for breadth of same. These specimens seemed mature, having well-developed gonads.

There appear to be two forms of the species among my specimens—one as figured, the other with a much sharper distinction between stalk and umbrella, and with the breadth of the umbrella as great as, or even greater than, the height of the umbrella. This latter seems to be the typical form, for Haeckel describes the umbrella as being almost as high as broad. The measurements of a medium-sized individual of this latter form are:—Length of stalk 3 mm.; height of umbrella 4 mm; breadth of umbrella 4·8 mm. The smallest specimen I possess measures respectively 1 mm., 1·1 mm., and 1·4 mm.

The sexes are distinct, but, so far as I can make out, indistinguishable in external appearance. The gonads are typically in four double rows, but I have a specimen with only three gonads and three lobes to the manubrium. Indeed, the animal is very variable, especially as regards the number of fascicles of secondary tentacles. The ova and spermatozoa are very minute and very numerous. I attempted five times

in August to fertilize artificially, but failed each time, chiefly, I believe, on account of the immaturity of the spermatozoa.

In the stomach of *Depastrum* I have noted the remains of a small crustacean (probably a Copepod). When kept in confinement unattached to a stone they sometimes void a floccular mass, along with one or two phacellæ, which looks like a portion of the stomach epithelium. The tentacles also are apt to slough off. It is very difficult to kill them well expanded, but I have obtained good results by carefully narcotizing with 30 % alcohol.

VI.—*On a new Genus of Spiders from Bounty Island, with Remarks on a Species from New Zealand.* By H. R. Hogg, M.A., F.Z.S.

Professor Charles Chilton, of Canterbury College, Christchurch, New Zealand, kindly sent me recently some spiders obtained by Mr. L. Cockayne from the islands lying to the east and south-east of the New Zealand coast. Among these were some specimens found on the guano deposits of Bounty Island, situated about 9 degrees east of Dunedin (170° 30′ East longitude), between the better-known Antipodes and Chatham Islands.

The spiders belong to the family Agalenidæ, and the well-developed colulus, front spinnerets close together, inner margin of the falx-sheath toothed and sloping, with fringe of incurved bristles on the outer, the upright maxillæ, and square lip show them to belong to M. Simon's group Cybæeæ. Allied to the genus *Emmenomma*, Sim.*, this species differs too materially to be included therein, so that I have formed a new genus to receive it.

Pacificana, gen. nov.

Differs from *Emmenomma* in having the cephalic part of the cephalothorax convex and wide in front instead of not convex and slightly attenuate. The thoracic fovea quite short and shallow instead of long and deep. Rear row of eyes so recurved as to form an area as long as broad instead of about one half as long as broad. Two teeth on inferior

* The single species for which M. Simon formed his genus *Emmenomma* was found on the islands adjacent to Cape Horn (about 67° W. long.). The two localities are therefore separated by over 120 degrees of longitude.